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STUDY OF THE EGGS OF THE *MELEAGRIDAE*

By DR. R. W. SHUFELDT

WITH ONE PHOTO BY THE AUTHOR

WHEN one comes to study the eggs of the various domesticated fowls, and compares those eggs with series of others laid by wild birds, belonging to genera of the supposed-to-be stock from which the several kinds of domesticated ones were derived, it is interesting, and of no little importance, to note the variations which have arisen in the form, colors and markings of the former.

With respect to chickens, for example, the widest variations have become established, since the time of their deviating from the wild stock. The eggs of our true breeds of game hens very closely resemble those of the *Gallus bankiva* of India; while those of all the other fancy and extravagantly formed fowls of the farm and barnyard depart from them in every particular. These are too well known to require any comment here.

As to guinea fowls, there appears to be, upon careful comparison of extensive series of the eggs of the wild birds with those of the domesticated ones, no material difference, and certainly none worthy of mention. This statement is likewise true of the eggs of the wild and tame mallards, muscovy ducks, mandarin duck or Chinese teal (*Aix galericulata*), swans, geese, pheasants, peacocks, and others.

In most of these forms, if not in all, the eggs are unmarked, and therefore any variations that might exist, would be only seen in shape and ground-color. In these particulars, the eggs of the wild birds themselves sometimes exhibit marked variations, as everyone knows who has, for example, ever compared large series of eggs of the wild mallards.

Caton, as I shall take occasion to point out farther on in this article, settled the point that the eggs of tame and wild turkeys were indistinguishable, that is, when we come to compare those exhibiting similar variations; by which is meant,

that when, for example, a wild turkey has laid a very dark egg, densely speckled with still darker spots, we can always find an egg—somewhere—which has been laid by a domesticated turkey, which, practically, would be exactly like it, and so on for other kinds. Beyond such notes as these, however, I shall not enter upon the study of the eggs of the tame turkey in this place, as my object is to record some observations I made upon studying the fine series of eggs of the *Meleagridae* in the collections of the United States National Museum.

Caton's article, entitled "The Wild Turkey and its Domestication" appeared in *The American Naturalist* (vol. XI, no. 6, 1877, pp. 321-330), and he there says, on page 324, "The eggs of the wild turkey vary much in coloring and somewhat in form, but in general are so like those of the tame turkey, that no one can select one from the other. The ground color is white over which are scattered reddish-brown specks. These differ in shades of color but much more in numbers. I have seen some on which scarcely any specks could be detected, while others were profusely covered with specks, all laid by the same hen in the same nest. The turkey eggs are more pointed than those of the goose or the barnyard fowl, and are much smaller in proportion to the size of the bird."

This, in the main, is a fair description of the eggs of *Meleagris*, while at the same time it may be said that the ground color is not always "white," nor the markings exactly what might be denominated "specks."

Turkey eggs of all kinds, laid by hens of the wild as well as domesticated birds, have been described and figured in a great many popular and technically scientific books and other works, in this country as well as abroad. I have examined a large part of this literature; but I soon became convinced of the fact that *no general description* would begin to stand for the different kinds of eggs that turkeys lay. They not only differ in size, form and markings, but in ground colors, numbers to the clutch, and some other particulars. In other words, the eggs of our various breeds of tame turkeys are like the eggs of the several forms of the wild bird, that is, the subspecies known to science in the United States avifauna. Therefore I have not thought it necessary to present here any descriptions of the eggs of the tame turkeys or reproductions of photographs of the same.

Among the most beautiful of the wild turkey eggs published are those which appear in Major Bendire's work. They were drawn and painted by Mr. John L. Ridgway of the United States Geological Survey.* These very eggs I have not only examined, studied and compared, but, thanks to Dr. Richmond of the Department of Birds of the Museum, and to Mr. J. H. Riley, his assistant, I had such specimens as I needed loaned me from the general collection of the Museum so that I might photograph them for use in the present connection. Dr. Richmond did me a special kindness here in selecting for my study the four eggs reproduced in the accompanying illustration (Fig. 82). These are all of *M. g. silvestris*.

Of these numbers 1 and 2 are from the same clutch, and doubtless laid by the same bird (nos. 30014, 30014). They were collected by Mr. J. H. Riley at Falls Church, Va. Number 1 is an egg measuring 66 mm x 45 mm, the color being a pale buffy-brown, finely and evenly speckled all over with umber-brown, with very minute specks to dots measuring a millimeter in diameter. The finest speckling, with no larger spots, is at the greater end (butt) for a third of the egg.

Numbr 2 measures 63 mm x 45 mm, the ground color being a pale cream, speckled somewhat thickly and uniformly all over with fine specks of light brown and lavender, with larger spots and ocellated marks of lavender moderately abun-

* BENDIRE CHARLES. *Life Histories of North American Birds with special reference to their Breeding Habits and Eggs*. Washington, Govmt. Printing Office, 1892.

dant over the middle and apical thirds, with none about the larger end or remaining third. Number 3 is no. 31185 of the Collection U. S. National Museum (ex

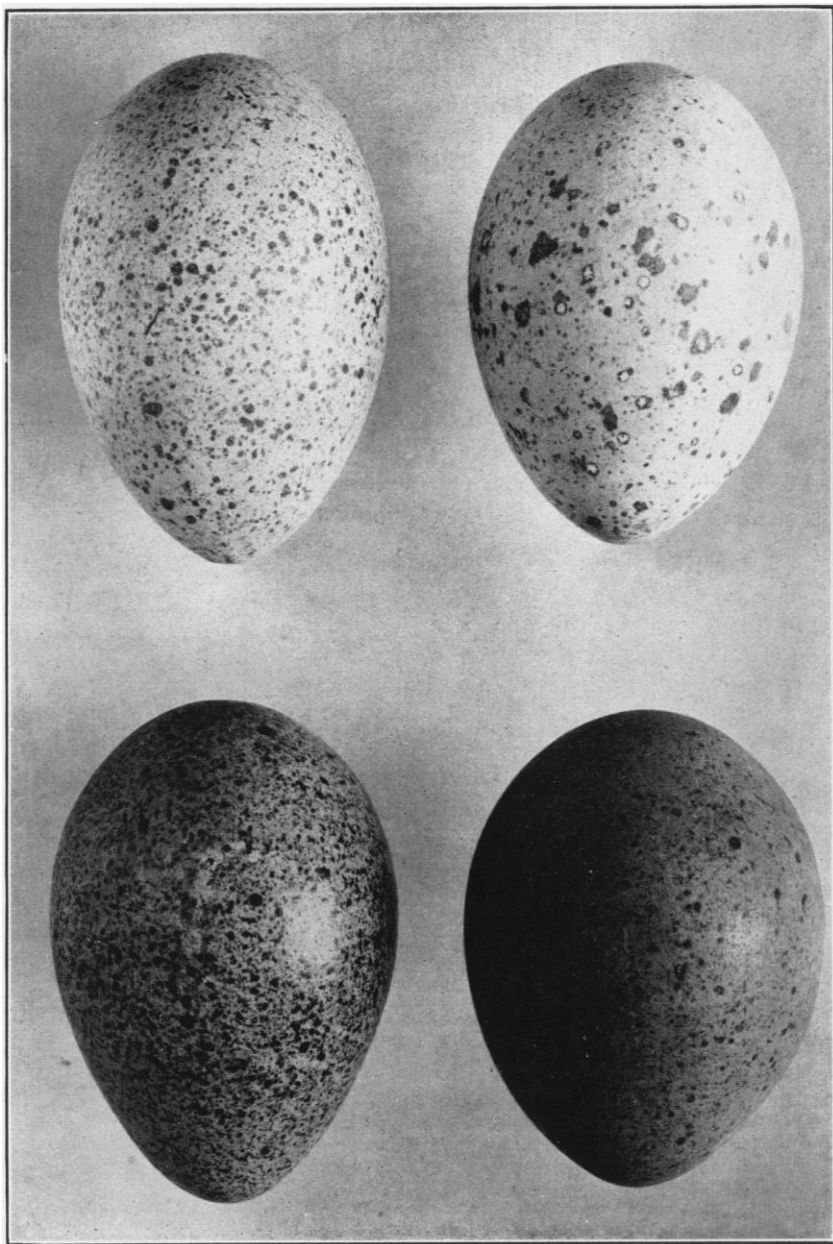


Fig. 82. EGGS OF WILD TURKEY (*Meleagris gallopavo silvestris*)
NO. 1, UPPER LEFT HAND ONE. NO. 2, UPPER RIGHT HAND ONE. NO. 3, LOWER
LEFT HAND ONE. NO. 4, LOWER RIGHT HAND ONE

Ralph Coll.) ; it was collected at Bridgeport, Michigan, by Allen Herbert (376
4700 '77) and measures 68 x 45. It is of a rather deep buffy-brown or ochre,

very thickly, and quite uniformly, speckled all over with more or less minute specks of dark brown.

Number 4, collected by H. R. Caldwell (91.310) the locality being unrecorded (Coll. U. S. Nat. Mus., no. 32407) measures 63x48. It is of a pale buffy-brown or pale *cafe au lait* color, quite thickly speckled all over with fine dots and specks of light brown. Some few of the specks are of noticeably larger size, and these are confined to the middle or apical thirds. Speckling of the butt or big end, extremely fine, and the specks of lighter color.

These eggs were selected by Dr. Richmond on the 16th of April, 1912, and photographed by me four days thereafter.

Referring to the Wild Turkey (*M. g. silvestris*), Bendire says (*loc. cit.*, p. 116): "In shape, the eggs of the Wild Turkey are usually ovate, occasionally they are elongate ovate. The ground color varies from pale creamy white to creamy buff. They are more or less heavily marked with well-defined spots and dots of pale chocolate and reddish brown. In an occasional set these spots are pale lavender. Generally the markings are all small, ranging in size from a no. 6 shot to that of dust shot, but an exceptional set is sometimes heavily covered with both spots and blotches of the size of buckshot, and even larger. The majority of eggs of this species in the U. S. National Museum collection, and such as I have examined elsewhere, resemble in coloration the figured type of *M. gallopavo mexicanus*, but average, as a rule, somewhat smaller in size."

"The average measurement of thirty-eight eggs in the U. S. National Museum collection is 61.5 by 46.5 millimeters. The largest eggs measure 68.5 by 46, the smallest 59 by 45 millimeters."

At the close of his account of *M. g. mexicanus*, Bendire states that "The only eggs of this species in the U. S. National Museum collection, about whose identity there can be no possible doubt, were collected on Upper Lynx Creek, Arizona, in the spring of 1870, by Dr. E. Palmer, whose name is well known as one of the pioneer naturalists of that Territory."

"The eggs are ovate in shape, their ground color is creamy white, and they are profusely dotted with fine spots of reddish brown, pretty evenly distributed over the entire egg. The average measurements of these eggs is 69 by 49 millimeters. The largest measures 70.5 by 49, the smallest 67 by 48 millimeters."

"The type specimen (no. 15573, U. S. National Museum collection, pl. 3, fig. 15) is one of the set referred to above" (*loc. cit.*, p. 119).

This set of three eggs I have personally studied. They are of *M. g. merriami*, and I find them to agree exactly with Captain Bendire's description just quoted.*

In the Ralph Collection (U. S. Nat. Mus. no. 27232, orig. no. 106) I examined six eggs of *M. g. intermedia*. They are of a pale ground color, all being uniformly speckled over with minute dots of lightish brown. These eggs are rather large for turkey eggs. They were collected at Brownsville, Texas, May 26, 1894.

Another set of *M. g. intermedia* collected by F. B. Armstrong (no. 25765, Coll. U. S. Nat. Mus.) are practically *unspotted*, and such spots as are to be found, are very faint, both the minute and the somewhat large ones.

In Dr. Ralph's collection (U. S. Nat. Mus. no. 27080) eggs of *M. g. intermedia* are *short*, with the large and fine dots of a pale *orange yellow*. I examined

* Some of the English books contain descriptions of the eggs of our wild turkeys, as for example "A Handbook to the Game-birds," by W. R. Ogilvie-Grant. (Lloyd's Nat. Hist. London, 1897, pp. 103-111.)

a number of eggs and sets of eggs of *M. g. osceola*, or Florida Turkey. In no. 25787, the eggs are short and broad, the ground color being pale whitish, slightly tinged with brown. Some of the spots on these eggs are unusually large in a few places, three or four running together, or are more or less confluent; others are isolated and of medium size; many are minute, all being of an earth-brown, varying in shades. In the case of no. 25787 of this set, the dark brown spots are more or less of a size and fewer in number; while one of them (no. 25787) is exactly like the eggs of number 3; finally, there is a pale one (no. 25787) with *fine* spots, few in number in middle third, very numerous at the ends. There are *scattered large spots* of a dark brown, the surface of each of which latter are raised with a kind of incrustation. Another egg (no. 27869) in the same tray (*M. g. osceola*), is *small*, pointed; pale ground color with very few spots of light brown (Coll. W. L. Ralph). Still another in this set (27868) is markedly *roundish*, with minute brown speckling, uniformly distributed. There are nine eggs in this clutch (no. 27868), and, apart from the differences in form, they all closely resemble each other, and this is by no means always the case, as the same hen may lay any of the various styles enumerated above, either as belonging to the same clutch, or at different seasons.

NESTING OF THE ROCKY MOUNTAIN NUTHATCH

By F. C. WILLARD

WITH TWO PHOTOS BY THE AUTHOR

TWO members of the interesting nuthatch family are regular breeders in the Huachuca Mountains. They are the Pigmy Nuthatch (*Sitta pygmaea*), and the Rocky Mountain Nuthatch (*Sitta carolinensis nelsoni*). The latter appears much rarer than the former, but, owing to its more general range in the mountains, I am inclined to believe that it is really the most numerous. The Pigmy Nuthatch is confined to the higher ridges where pine stubs abound. The Rocky Mountain Nuthatch is found all over the mountains, from the oaks at the mouths of the canyons to the highest peaks, and it nests wherever found.

Like their eastern cousin, the White-breasted, these birds talk to each other as they hunt for food along the trunk or branches of some tree. If the female is sitting, the male still keeps up his "talking" as he hunts for food to take to her. It is by watching him at this time that I am able to locate the nest. He usually takes the food for his mate into the nest, but it is a very common thing for her to come to the entrance to receive it, or even to leave the nest cavity entirely.

A natural cavity with a long narrow opening is generally selected. The one shown in the illustration is typical. Nine out of ten nests are in oaks, the balance usually in pines though a sycamore or madrone is occasionally selected.

The nest is a mass of assorted fur and hair of various animals, skunk and squirrel fur, cow and deer hair predominating. I have also found rabbit fur and bear's hair in their nests. Enough is used to completely fill the bottom of the cavity and come up a little on the sides.

Five eggs comprise the usual set, though I once found three about to hatch,